

## WHAT IS CLAIMED IS:

1           1.     A method of accessing a data file in a distributed computing  
2 environment, comprising:

3                 from a source site, sending to a client site physical address meta data and  
4 routing meta data for one or more logical file blocks of a data file in response to a  
5 request from the client site for access to the data file.

1           2.     The method of claim 1, further comprising storing at the source site a  
2 data structure comprising physical address meta data and routing meta data for one  
3 or more logical file blocks of the requested data file.

1           3.     The method of claim 1, wherein the routing meta data comprises one  
2 or more node addresses along one or more network routes between the client site  
3 and the source site for the one or more logical file blocks of the requested data file.

1           4.     The method of claim 3, wherein the routing meta data comprises next  
2 hop node addresses from the client site for each of the one or more network routes.

1           5.     The method of claim 3, wherein the routing meta data comprises  
2 complete path information from the client site to the source site for each of the one  
3 or more network routes.

1           6.     The method of claim 1, wherein the meta data is sent to the client site  
2 in accordance with a routable network protocol.

1           7.     A method of accessing a data file in a distributed computing  
2 environment, comprising:

3                 at a client site, selecting one of two or more network routes over which a  
4 logical file block of the data file is accessible based upon routing meta data  
5 incorporated within a data structure containing file access meta data including  
6 physical address meta data.

1           8.     The method of claim 7, further comprising:

2 at the client site, selecting a network route over which to access the logical file  
3 block based upon information relating to one or more transmission characteristics of  
4 each of the two or more network routes.

1 9. The method of claim 8, wherein a network route is selected based upon  
2 load characteristics of the two or more network routes.

1 10. The method of claim 8, wherein a network route is selected based upon  
2 physical media characteristics of the two or more network routes.

1 11. The method of claim 7, further comprising accessing the logical file  
2 block over the selected network route in accordance with a routable network  
3 protocol.

1 12. A system for accessing a data file in a distributed computing  
2 environment, comprising:  
3 a source site file system configured to manage access to one or more logical  
4 file blocks of a data file and to send to a client site physical address meta data and  
5 routing meta data for the one or more logical file blocks in response to a request  
6 from the client site for access to the data file.

1 13. The system of claim 12, wherein the source site file system is  
2 configured to store a data structure comprising physical address meta data and  
3 routing meta data for one or more logical file blocks of the requested data file.

1 14. The system of claim 12, wherein the routing meta data comprises one  
2 or more node addresses along one or more network routes between the client site  
3 and the source site for the one or more logical file blocks of the requested data file.

1 15. A system for accessing a data file in a distributed computing  
2 environment, comprising:  
3 a client site file system configured to select one of two or more network routes  
4 over which a logical file block of the data file is accessible based upon routing meta

5 data incorporated within a data structure containing file access meta data including  
6 physical address meta data.

1 16. The system of claim 15, wherein the client site file system is configured  
2 to select a network route based upon information relating to one or more  
3 transmission characteristics of each of the two or more network routes:

1 17. The system of claim 16, wherein the client site file system is configured  
2 to select a network route based upon load characteristics of the two or more network  
3 routes.

1 18. The system of claim 16, wherein the client site file system is configured  
2 to select a network route based upon physical media characteristics of the two or  
3 more network routes.

1 19. A data structure for accessing a data file in a distributed computing  
2 environment, comprising:  
3 physical address meta data and routing meta data for one or more logical file  
4 blocks of the data file.

1 20. The data structure of claim 19, wherein the routing meta data  
2 comprises one or more node addresses along one or more network routes between a  
3 requesting client site and a source site for the one or more logical file blocks of the  
4 data file.